THAT WHICH IS CLAIMED IS:

1. A phased array antenna comprising:

a substrate having a first surface, and a second surface adjacent thereto and defining an edge therebetween; and

a plurality of dipole antenna elements on the first surface and at least a portion of at least one dipole antenna element on the second surface, each dipole antenna element comprising

a medial feed portion and a pair of legs extending outwardly therefrom, and

adjacent legs of adjacent dipole antenna elements including respective spaced apart end portions having predetermined shapes and relative positioning for providing increased capacitive coupling between the adjacent dipole antenna elements.

2. A phased array antenna according to Claim 1 further comprising a load connected to the medial feed portion of said at least one dipole antenna element having at least a portion thereof on the second surface.

3. A phased array antenna according to Claim 2 wherein said load comprises a resistive load.

4. A phased array antenna according to Claim 1 further comprising respective feed lines connected to said plurality of dipole antenna elements on the first surface.

5. A phased array antenna according to Claim 1 further comprising a ground plane adjacent said plurality of dipole antenna elements; and wherein said at least one dipole antenna element having at least a portion thereof on the second surface is connected to said ground plane.

6. A phased array antenna according to Claim 5 wherein the phased array antenna has a desired frequency range; and wherein said ground plane is spaced from the first surface less than about one-half a wavelength of a highest desired frequency.

7. A phased array antenna according to Claim 1 wherein the second surface is orthogonal to the first surface.

8. A phased array antenna according to Claim 1 wherein said substrate has a generally rectangular shape having a top surface defining the first surface, and first and second pairs of opposing side surfaces defining the second surface.

9. A phased array antenna according to Claim 1 wherein each leg comprises:

an elongated body portion; and

an enlarged width end portion connected to an end of the elongated body portion.

10. A phased array antenna according to Claim 1 wherein the spaced apart end portions in adjacent legs comprise interdigitated portions.

11. A phased array antenna according to Claim 10 wherein each leg comprises:

an elongated body portion;

an enlarged width end portion connected to an end of the elongated body portion; and

a plurality of fingers extending outwardly from said enlarged width end portion.

12. A phased array antenna according to Claim 1 wherein the phased array antenna has a desired frequency range; and wherein the spacing between the end portions of adjacent legs is less than about one-half a wavelength of a highest desired frequency.

13. A phased array antenna according to Claim 1 wherein said plurality of dipole antenna elements comprises first and second sets of orthogonal dipole antenna elements to provide dual polarization.

14. A phased array antenna according to Claim 1 wherein each dipole antenna element comprises a printed conductive layer.

15. A phased array antenna according to Claim 1 wherein said plurality of dipole antenna elements are sized and relatively positioned so that the phased array antenna is operable over a frequency range of about 2 to 30 GHz.

16. A phased array antenna according to Claim 1 wherein said plurality of dipole antenna elements are sized and relatively positioned so that the phased array

antenna is operable over a scan angle of about 60 degrees.

17. A phased array antenna according to Claim 1 further comprising a respective impedance element electrically connected between the spaced apart end portions of adjacent legs of adjacent dipole antenna elements for further increasing the capacitive coupling therebetween.

18. A phased array antenna according to Claim 1 further comprising a respective printed impedance element adjacent the spaced apart end portions of adjacent legs of adjacent dipole antenna elements for further increasing the increased capacitive coupling therebetween.

19. A phased array antenna comprising:

a substrate having a first surface, and at least a pair of second surfaces adjacent thereto and defining respective edges therebetween;

a plurality of dipole antenna elements on the first surface and the second surfaces, each dipole antenna element comprising a medial feed portion and a pair of legs extending outwardly therefrom; and

a respective load connected to the medial feed portion of said plurality of dipole antenna elements on the second surfaces.

20. A phased array antenna according to Claim 19 wherein said load comprises a resistive load.

21. A phased array antenna according to Claim 19 further comprising a ground plane adjacent said plurality of dipole antenna elements; and wherein each dipole antenna element comprising a load connected to the medial feed portion thereof is also connected to said ground plane.

22. A phased array antenna according to Claim 21 wherein the phased array antenna has a desired frequency range; and wherein said ground plane is spaced from the first surface of said substrate less than about one-half a wavelength of a highest desired frequency.

23. A phased array antenna according to Claim 19 wherein each leg comprises:

an elongated body portion; and

an enlarged width end portion connected to an end of the elongated body portion.

24. A phased array antenna according to Claim 19 wherein adjacent legs of adjacent dipole antenna elements on the first and second surfaces include respective spaced apart end portions having predetermined shapes and relative positioning for providing increased capacitive coupling between the adjacent dipole antenna elements.

25. A phased array antenna according to Claim 24 wherein the spaced apart end portions in adjacent legs comprise interdigitated portions.

26. A phased array antenna according to Claim 22 further comprising a respective impedance element electrically connected between the spaced apart end portions of adjacent legs of adjacent dipole antenna elements for further increasing the capacitive coupling therebetween.

27. A phased array antenna according to Claim 22 further comprising a respective printed impedance element adjacent the spaced apart end portions of adjacent legs of adjacent dipole antenna elements for further increasing the increased capacitive coupling therebetween.

28. A method of making a phased array antenna on a substrate having a first surface, and a second surface adjacent thereto and defining an edge therebetween, the method comprising:

forming a plurality of dipole antenna elements on the first surface and at least a portion of at least one dipole antenna element on the second surface;

each dipole antenna element comprising a medial feed portion and a pair of legs extending outwardly therefrom, and adjacent legs of adjacent dipole antenna elements on the first and second surfaces including respective spaced apart end portions having predetermined shapes and relative positioning for providing increased capacitive coupling between the adjacent dipole antenna elements.

29. A method according to Claim 28 further comprising connecting a load to the medial portion of the

at least one dipole antenna element having at least a portion thereof on the second surface.

30. A method according to Claim 29 wherein the load comprises a resistive load.

31. A method according to Claim 29 further comprising:

forming a ground plane adjacent the plurality of dipole antenna elements; and

connecting the at least one dipole antenna element having at least a portion thereof on the second surface to the ground plane.

32. A method according to Claim 31 wherein the phased array antenna has a desired frequency range; and wherein the ground plane is spaced from the first surface less than about one-half a wavelength of a highest desired frequency.

33. A method according to Claim 31 wherein the substrate has a generally rectangular shape having a top surface defining the first surface, and first and second pairs of opposing side surfaces defining the second surface.

34. A method according to Claim 28 wherein forming the plurality of dipole antenna elements comprises forming each leg with an elongated body portion, and an enlarged width end portion connected to an end of the elongated body portion.

35. A method according to Claim 28 wherein shaping and positioning respective spaced apart end portions comprises forming interdigitated portions.

36. A method according to Claim 28 wherein forming the plurality of dipole antenna elements comprises forming first and second sets of orthogonal dipole antenna elements to provide dual polarization.

37. A method according to Claim 28 further comprising electrically connecting a respective impedance element between the spaced apart end portions of adjacent legs of adjacent dipole antenna elements for further increasing the capacitive coupling therebetween.

38. A method according to Claim 28 further comprising positioning a respective printed impedance element adjacent the spaced apart end portions of adjacent legs of adjacent dipole antenna elements for further increasing the increased capacitive coupling therebetween.